

PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY EXAMINATION

REC'D 07 FEB 2002
REPORT
 WIPO PCT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference AW/27005 WO	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/FI00/00748	International filing date (day/month/year) 04/09/2000	Priority date (day/month/year) 16/09/1999
International Patent Classification (IPC) or national classification and IPC H04L12/00		
Applicant NOKIA CORPORATION et al.		

<ol style="list-style-type: none"> 1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 6 sheets, including this cover sheet. <ul style="list-style-type: none"> <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). <p>These annexes consist of a total of 9 sheets.</p> 3. This report contains indications relating to the following items: <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application 	
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Date of submission of the demand 30/03/2001	Date of completion of this report 05.02.2002
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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/FI00/00748

I. Basis of the report

1. With regard to the elements of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):
Description, pages:

5-19 as originally filed

1-4,4a as received on 21/01/2002 with letter of 21/01/2002

Claims, No.:

1-25 as received on 21/01/2002 with letter of 21/01/2002

Drawings, sheets:

1/5-5/5 as originally filed

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/FI00/00748

the description, pages:

the claims, Nos.:

the drawings, sheets:

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):
(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes:	Claims 1-25
	No:	Claims
Inventive step (IS)	Yes:	Claims
	No:	Claims 1-25

Industrial applicability (IA) Yes: Claims 1-25
No: Claims

2. Citations and explanations
see separate sheet

V. REASONED STATEMENT UNDER RULE 66.2(A)(II) WITH REGARD TO NOVELTY, INVENTIVE STEP AND INDUSTRIAL APPLICABILITY

1. The following documents are cited:

D1: WO 99 13661 A1 (MOTOROLA INC.) 18 March 1999

D2: US 5 633 839 A (ALEXANDER, ET AL) 27 May 1997

D3: EP 0 809 221 A2 (SUN MICROSYSTEMS, INC.) 26 November 1997

D4: US 4 992 940 A (DWORKIN) 12 February 1991

2. Document D1 discloses (see the passages cited in the Search report), according to features of present claim 1, a system for supplying data in electronic form comprising a mobile terminal (wireless messaging device 106), a supplying terminal (wireless communication terminal 104: page 3, line 14), a network (connection between information server 102 and wireless communication system 104: page 3, lines 14-19 and figures) and a wireless connection (wireless connection between wireless communication system 104 and wireless messaging device 106), the supplying terminal (104) being able to obtain electronic data from at least one data server (102) by communication over the network, the supplying terminal (104) being able to supply at least part (pages 3-6) of the electronic data to the mobile terminal (106) by communication over the wireless connection.

The subject-matter of claim 1 differs from this disclosure only in that the network connecting the data server to the supplying terminal is a wireless network whereas in document D1 there is only the information that data are communicated from the information server 102 to the wireless communication system 104 without indicating how the connection is performed, i.e. wired or wireless.

However, the structures of the two systems are nearly identical, the only small difference being the detail regarding the particular choice of the wireless connection.

The skilled person would consider the similarity between a wired connection

between a server and a wireless communication system and a wireless connection between a server and a supplying terminal. This trivial difference cannot be accredited with an inventive step. Indeed the use of wireless communications is in 2000 well known and there is no inventive activity in the use of a wireless network instead of a wired network. In particular the network used is a normal GSM network for instance which is well known also for transmission of data.

It would be immediately apparent to the person skilled in the art of wireless communications that the system known from document D1 could, by minor modifications (e.g. introducing a wireless network instead of a wired connection) generally known in the art (also using the knowledge of wireless communication systems in 2000), be adapted to function also with a wireless network between the server and the supplying terminal in the sense of the present application. The skilled person would thus arrive, without the exercise of inventive skill, at a system for supplying data in electronic form according to claim 1.

Claim 1 does therefore not fulfil the criteria of Article 33 (1) and (3) PCT.

3. Independent apparatus claim 24 corresponds in terms of method features to the system of claim 1. The same considerations stated with regard to the inventiveness of the subject-matter of claim 1 thus apply to the subject-matter of claim 24.

Claim 24 does therefore not fulfil the criteria of Article 33(1) and (3) PCT.

4. Independent apparatus claim 25 relates to a supplying terminal operating in the particular system for supplying data in electronic form disclosed in claim 1. The same considerations stated with regard to the inventiveness of the subject-matter of claim 1 thus apply to the subject-matter of claim 25. Indeed the wording of independent claim 25 is very broad and the subject-matter of the claim only corresponds to a portion of that disclosed in claim 1.

Claim 25 does therefore not fulfil the criteria of Article 33(1) and (3) PCT.

5. Dependent claims 2 to 23 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, involve an inventive step for the following reasons: the subject-matter of said claims is either directly derivable from prior art documents D1-D4 or represent minor design details generally known in the field of wireless data communications.

The subject-matter of dependent claims 2 to 23 therefore does not involve an inventive step so that these claims do not comply with the dispositions set out in Articles 33 (1) and (3) PCT.

6. The Applicant did not argue why the skilled person would not obviously substitute the wired connection known from D1 with the wireless connection used in the present application. The Examining Authority was of the opinion, and the opinion is maintained after the reply of the Applicant, that the skilled person would modify the system known from D1, aware of the wireless technology at the filing date, without exercising any inventive activity, this modification not involving any surprising effect.

SUPPLY OF ELECTRONIC DATA

The invention relates to supply of electronic data and is particularly, but not exclusively, related to supply of electronic content by wireless transmission to
5 mobile terminals.

Vending machines are known in which electronic data can be written on to a data carrier which is then supplied to a customer. US 5 633 839 discloses a vending machine which writes a customer's selection of individual pieces of music onto a
10 compact disc. The user can pay for the compact disc by using a credit card which is inserted into the vending machine.

A disadvantage of this type of approach is that it is necessary for the customer to get physically close to the vending machine in order to make a selection of
15 electronic data (for example by using a keyboard built in the vending machine), to pay for the selection (for example by inserting coins or a credit card) and to retrieve the selection of electronic data on a medium for carrying electronic data (for example a CD-ROM).

20 It has also been proposed to use calls from mobile telephones as the basis of payment for goods and services. For example, rather than using coins to pay for a soft drink from a vending machine, a user of the mobile telephone dials a particular telephone number and the cost of the soft drink is charged to his telephone bill.
25 It is also known to download ringing tones from a cellular network for use in mobile telephones.

WO99/13661 discloses a wireless messaging system in which a mobile messaging device receives wireless application programs from an information
30 server via a wireless communication terminal. The mobile messaging device and the wireless communication terminal communicate over a wireless network.

US 5 633 839 discloses a vending machine comprising a memory for storing music in electronic format, an electronic catalogue, a user interface, a CD-ROM burner, and a payment system. A user browses catalogue and selects music to be burnt onto a CD-ROM. Payment is made and the CD-ROM is burnt and delivered.

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EP 0 809 221 discloses a computer system having a large database storing detailed information about equipment. Users use an interactive menu to retrieve information about equipment with specific characteristics and place orders. The orders are communicated to the vendors electronically, or printed and dispatched

10 by post.

US 4 992 940 discloses a vending machine which stores information about electronic content, and the electronic content itself. Client computers query the vending machine to find out information about electronic content, and directly download the electronic content.

According to a first aspect of the invention there is provided a system for supplying data in electronic form in accordance with claim 1.

20 Preferably the supplying terminal is a vending machine which supplies electronic data in exchange for a monetary payment.

Preferably there is a plurality of data servers to supply electronic data to the supplying terminal. Preferably there is a plurality of supplying terminals.

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Preferably the networks use a common communication protocol. Preferably the supplying terminal acts as a proxy between the mobile terminal and the data server. Alternatively, it acts as a gateway.

30 In a preferred embodiment, the mobile terminal is a mobile telephone. However, the invention is not limited to devices which are used for communicating, for example by telephony, but may apply to other devices which are able to receive data or content. These may be consumer devices with electronic memory which

can receive electronic data when a user of the device requests it. For example, the electronic data may be electronic games for game playing devices, electronic video recordings for portable video players, electronic recordings of music or other audio-media for portable audio players, digital maps or digital books for personal

5 digital assistants and smart telephones (such as the Nokia 9110 Communicator) and directories and telephone books for mobile telephones. All that is required is for the mobile terminal to use a communication method which is compatible with that used by the supplying terminal.

10 Preferably the mobile terminal and the supplying terminal communicate by the Wireless Application Protocol (WAP). If WAP is used to communicate, many consumer terminals including mobile telephones, personal digital assistants, smart telephones, game playing devices and mobile audio and/or video playing devices, if properly configured and WAP-enabled, should be able to download electronic
15 data from the supplying terminal.

According to a second aspect of the invention there is provided a method for supplying data in electronic form in accordance with claim 24.

20 Preferably the data transmitted to the mobile terminal from the supplying terminal is only part of the data transmitted to the supplying terminal by the data server or data servers. A user of the mobile terminal may determine the part which is transmitted. Alternatively this may be determined automatically.

25 According to a third aspect of the invention there is provided a supplying terminal for supplying data in electronic form in accordance with claim 25.

30 Preferably the wireless network and the wireless connection operate using different carrier frequencies. Preferably the wireless network uses a carrier frequency which is lower than the carrier frequency of the wireless connection. Preferably the wireless network is a cellular network using a carrier frequency in the range 0.45 to 2 GHz. Most preferably it uses a carrier frequency of 0.9 GHz or 1.8 GHz. Preferably the wireless connection is a local network (forming a pico-cell)

using a carrier frequency in the region of 2.4 GHz. The wireless connection may be provided by a local network according to Bluetooth, according to IEEE 802.11, or according to any other Low Power Radio Frequency (LPRF) communication technique. However, the wireless connection may be provided by a cellular
5 network.

The wireless network may be a cellular network such as GSM. The supplying terminal may request the data by WAP. The wireless network may obtain the data from a second network, such as the Internet, via a gateway. The second network
10 may be a wired network. If the second network is the Internet, the gateway may request the data by using HyperText Transfer Protocol (HTTP) and HyperText Mark-up Language (HTML). Alternatively, the data may be hosted directly on the data server, in which case the need to have access to the second network can be avoided.

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According to a fourth aspect of the invention there is provided a mobile terminal which is able to interrogate, over a local network, a supplying terminal according to the third aspect of the invention in order to determine the nature of electronic data stored in the supplying terminal, the mobile terminal having a display on which can
20 be presented information relating to the electronic data, requesting means to request the supplying terminal to transmit at least some of the electronic data, receiving means which can receive the transmitted electronic data, and storage means which can store transmitted electronic data.

25 In a system according to the invention, customers do not need to browse the Internet or access explicitly a variety of central locations to download electronic data; they may have access to the electronic data simply by entering the vicinity of a supplying terminal.

30 The invention overcomes problems with scalability which would exist if a central server were to be used for interactive downloading of electronic content, such as a WWW-site or a video-on-demand server. The plurality of supplying terminals is able to spread real-time simultaneous accesses by a large number of customers

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(perhaps hundreds of thousands) among a number of supplying terminals. Servers providing electronic data to these supplying terminals, and obtaining information

Claims

1. A system (10) for supplying data in electronic form comprising a mobile terminal (14), a supplying terminal (12), and a wireless connection, the supplying terminal being able to supply at least part of the electronic data to the mobile terminal by communication over the wireless connection, characterised in that the supplying terminal is able to obtain electronic data from at least one data server (18, 20) by communication over a wireless network (24).
5
- 10 2. A system (10) according to claim 1 in which there is a plurality of data servers (18, 20) to supply electronic data to the supplying terminals.
- 15 3. A system (10) according to claim 1 or claim 2 in which the supplying terminal (12) acts as a proxy between the mobile terminal (14) and the data server (18, 20).
- 20 4. A system (10) according to any preceding claim in which transfer of electronic data between the at least one data server (18, 20) and the supplying terminal (12) is carried out securely.
- 25 5. A system (10) according to any preceding claim in which transfer of electronic data between the supplying terminal (12) and the mobile terminal (14) is carried out securely.
- 30 6. A system (10) according to any preceding claim in which the supplying terminal (12) is a vending machine which supplies electronic data in exchange for a monetary payment.
7. A system (10) according to claim 6 in which the supplying terminal (12) and mobile terminal (14) exchange information necessary to enable payment to be made for the electronic data supplied to the mobile terminal.

8. A system (10) according to any preceding claim in which the mobile terminal (14) and the supplying terminal (12) communicate by the Wireless Application Protocol (WAP).
- 5 9. A system (10) according to any preceding claim in which the wireless network (24) and the wireless connection operate using different carrier frequencies.
- 10 10. A system (10) according to claim 9 in which the wireless network (24) uses a carrier frequency which is lower than the carrier frequency of the wireless connection.
11. A system (10) according to any preceding claim in which the wireless network (24) is provided by a cellular network.
- 15 12. A system (10) according to any preceding claim in which the wireless connection is a connection between the mobile station and the supplying terminal in a pico-cell.
- 20 13. A system (10) according to any preceding claim in which the wireless connection is a Low Power Radio Frequency (LPRF) connection.
14. A system (10) according to any preceding claim in which wireless network (24) obtains the data from a second network which is a wired network.
- 25 15. A system (10) according to any preceding claim in which the wireless network (24) obtains the data from the Internet via a gateway.
- 30 16. A system (10) according to any preceding claim in which the data transmitted to the mobile terminal (14) from the supplying terminal (12) is only part of the data transmitted to the supplying terminal by the or each data server (18, 20).
17. A system (10) according to claim 16 in which a user of the mobile terminal (14) determines the part of the data which is transmitted.

18. A system (10) according to any preceding claim in which the electronic data obtained from at least one data server (18, 20) is determined by a person controlling operation of the supplying terminal (12).

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19. A system (10) according to claim 18 in which the configuration of electronic data within the supplying terminal (12) is determined by the person controlling operation of the supplying terminal.

10 20. A system (10) according to any preceding claim in which the price at which the electronic data is sold is determined by a person controlling supply of that electronic data to mobile terminals (14).

15 21. A system (10) according to any preceding claim in which the mobile terminal (14) is a mobile telephone.

20 22. A system (10) according to any of claims 1 to 20 in which the mobile terminal (14) is selected from a group consisting of game playing devices, portable audio players, portable video players personal digital assistants and smart telephones.

25 23. A system (10) according to any preceding claim in which the data in electronic form is uploaded to the supplying terminal in an operation that is independent from a request being made for the data in electronic form by the mobile terminal.

24. A method for supplying data in electronic form comprising the steps of:
providing a mobile terminal (14);
providing a supplying terminal (12);
30 providing one or more data servers (18, 20);
providing a wireless connection for enabling data transfer between the mobile terminal and the supplying terminal; and

the supplying terminal obtaining data from at least one data server by communication over the wireless network,

characterised in that the method comprises the steps of providing a wireless network (24) for enabling data transfer between the supplying terminal and data servers and the supplying terminal transmitting at least part of the data to the mobile terminal over the wireless connection.

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25. A supplying terminal (12) for supplying data in electronic form comprising first communication means (32) for receiving data from at least one data server (18, 20)

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over a wireless network (24) and second communication means (34) for sending at least part of the data to a mobile terminal (14) over a wireless connection, characterised in that the first communication means is wireless communication means for receiving data from at least one data server (18, 20) over a wireless network (24).